



DUNBAR – 4650WS

4:1 SHRINK RATIO, SEMI-RIGID, DUAL-WALL, POLYOLEFIN TUBING
(Extended Temperature Range)

Applications

DUNBAR-4650WS is a fully flame retardant, semi-rigid, high shrink ratio, adhesive lined heat shrinkable polyolefin tube. Both jacket and adhesive lining (which flows when heated) are flame retardant. It is designed for insulation and encapsulation of wire splicing and used to seal and protect a wide variety of electrical applications, including wire splices, breakouts, and connectors-to-cable transitions.

Features

- ★ Shrink ratio: 75% or more in the radial direction, 10% or less in the axial direction
- ★ In stock for immediate shipments
- ★ Continuous operating temperature: - 55°C (-67°F) to 150°C (302°F)
- ★ Fully Flame-Retardant: Jacket and Adhesive
- ★ Excellent electrical properties
- ★ High resistance to abrasion chemicals and oils

Standard

- ★ UL 224 (File Number: E319314)
- ★ RoHS Compliant

Specification Values

Property		Test Method	Value
Physical	Unaged	Tensile strength	Min. 2,000 psi
		Elongation	Min. 200%
	Aged	Tensile strength	Min. 1,400 psi
		Elongation	Min. 100%
	Specific Gravity	ASTM D792	Max. 1.33
	Concentricity	ASTM D2671	Min. 60%
	Heat shock	250°C /4 hrs	No cracks, flowing or dripping
	Cold bend	ASTM D746	No cracking
Secant Modulus	ASTM D882	Max. 25,000 psi	
Electrical	Dielectric strength	ASTM D2671	Min. 500 Volts/Mil.
	Volume resistivity	ASTM D876	Min. $1 \times 10^{14} \Omega \cdot \text{cm}$
Chemical	Copper corrosion	150°C/16 hrs	No corrosion
	Fungus resistance	ASTM G21	No growth
	Flammability	ASTM D2671	Pass – Jacket & Adhesive

Rev May 2011



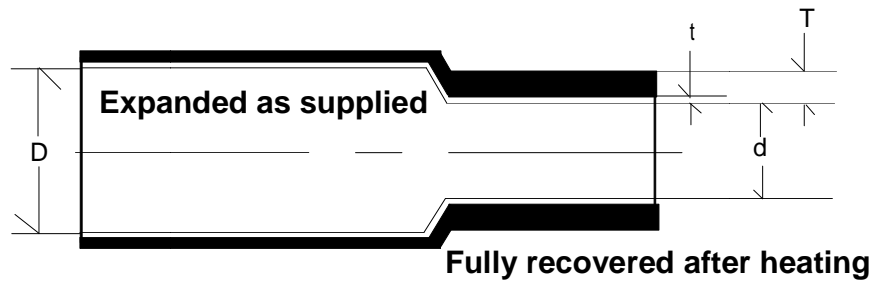
Dunbar Products, LLC
Your Stocking Partner for Quality Components

P.O Box 112218, Carrollton, Texas 75011-2218
Tel: (469) 568-0800
Fax: (469) 568-0808



DUNBAR – 4650WS

4:1 SHRINK RATIO, SEMI-RIGID, DUAL-WALL, POLYOLEFIN TUBING
(Extended Temperature Range)



Product Dimensions

Minimum Shrink Temperature: 130°C

Size	Printed	Expanded		Recovered					
		Internal Diameter (min.) (D)		Internal Diameter (max.) (d)		Total Wall Thickness (Nominal) (T)		Wall Thickness Adhesive Wall (Nominal) (t)	
		In.	mm	In.	mm	In.	mm	In.	mm
6 mm (No. 0)	FDW-0	0.236	6.3	0.050	1.27	0.047	1.20	0.022	0.56
8 mm (No. 1)	FDW-1	0.315	8.2	0.065	1.65	0.060	1.52	0.030	0.76
11 mm (No. 2)	FDW-2	0.433	11.3	0.090	2.29	0.075	1.91	0.040	1.02
12 mm (No. 3)	FDW-3	0.511	12.1	0.100	2.54	0.085	2.15	0.043	1.10
18 mm (No. 4)	FDW-4	0.708	18.1	0.175	4.45	0.095	2.41	0.054	1.30

Rev. May 2011



Dunbar Products, LLC
Your Stocking Partner for Quality Components

P.O. Box 112218, Carrollton, Texas 75011-2218
Tel: (469) 568-0800
Fax: (469) 568-0808